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# ZAMBIA INTEGRATED SYSTEMS STRENGTHENING PROGRAM

## Report on the Review of High Impact Nutrition Interventions at Community Level

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ZISSP
Increasing the use of High Impact Health Services

# REPORT ON THE REVIEW OF HIGH IMPACT NUTRITION INTERVENTIONS AT COMMUNITY LEVEL

## 31ST JANUARY 2012

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## ACRONYMS

| | |
|---|---|
| BAZ | Breastfeeding Association of Zambia |
| CHAZ | Churches Association of Zambia |
| CBGMP | Community-based Growth Monitoring Promotion |
| CF | Child Fund |
| CMAM | Community Management of Acute Malnutrition |
| CHW | Community Health Worker |
| CRS | Catholic Relief Services |
| CSO | Central Statistics Office |
| ECSA | Eastern, Central, and Southern Africa Community for Health |
| IDA | Iodine Deficiency Anemia |
| IYCF | Infant and Young Child Feeding |
| IGA | Income Generating Activities |
| FANTA | Food and Nutrition Technical Assistance |
| FAO | Food and Agriculture Organization |
| GAIN | Global Alliance for Improved Nutrition |
| GRZ | Government Republic of Zambia |
| HIMS | Health Information Management System |
| HSSP | Health Systems Strengthening Program |
| IMCI | Integrated Management of Childhood Illness |
| JICA | Japanese International Cooperating Agency |
| MCH | Maternal and Child Health |
| MDG | Millennium Development Goal |
| MAL | Ministry of Agriculture and Livestock |
| MOE | Ministry of Education |
| MOH | Ministry of Health |
| MUAC | Mid-upper Arm Circumference |
| NCHWP | National Community Health Worker Program |
| NFNC | National Food and Nutrition Commission |
| NHSP | National Health Strategic Plan |
| NGOs | Non-governmental Organizations |
| PD-Hearth | Positive Deviance-Hearth |
| PHO | Provincial Health Office |
| PMO | Provincial Medical Officer |
| SMAG | Safe Motherhood Action Group |
| SUN | Scaling Up Nutrition |
| RED | Reach Every District |
| RUTF | Ready-to-use Therapeutic Feeds |
| TWG | Technical Working Group |
| UN | United Nations |
| UNICEF | United Nations Children Fund |
| WHO | World Health Organization |
| VAD | Vitamin A Deficiency |
| ZISSP | Zambia Integrated Systems Strengthening Program |

## EXECUTIVE SUMMARY

In Zambia, under-nutrition contributes to the high burden of disease, especially among children below the age of five years. Chronic malnutrition in this age group accounts for 45.4 percent stunting. In addressing malnutrition, a number of organizations are engaged in implementing high impact community nutrition interventions. Despite this, there is little information available on the type of nutrition interventions, the coverage and location, or the impact of such interventions at community level. Since experiences and lessons learned during implementation of these interventions are usually not shared, it is difficult to plan or leverage resources. As a result, the Zambia Integrated Systems Strengthening Program (ZISSP), working with the Ministry of Health (MOH), funded a review of high impact community nutrition interventions in December 2011.

The review relied on participatory methods to collect data. The first approach was to review the existing literature to identify the recommended high impact community nutrition interventions implemented in Zambia, as well as partners engaging in and the locations of where such interventions are implemented. The literature review guided the development of the key informant interview checklist for obtaining data in the field. Key informant interviews were conducted at the central level (MOH, ZISSP, National Food and Nutrition Commission [NFNC], United Nations Children's Fund [UNICEF], Care International), two provincial health offices (Livingstone in Southern Province, and Ndola in Copperbelt Province), one district health office (Masaiti) and three community level locations (Chinkuyu in Masaiti district, Simango in Kazungula district and Matero Reference Clinic in Lusaka).

The findings revealed that high impact community nutrition interventions fall into three categories: (1) frequently implemented interventions; (2) interventions integrated with other programs; and (3) interventions unsupported by policy. Community health workers (CHWs)[1] perform numerous tasks in complementing the work of health staff in the communities. However, CHWs are not provided with the necessary incentives to retain their services on a sustainable basis. As a result, there is a high turnover of CHWs/volunteers.

This report is intended to provide a general picture on nutrition interventions at the community level for the benefit of the MOH, donors and other stakeholders. The review observed the following:

- **Frequently implemented** high impact community nutrition interventions include infant and young child feeding (IYCF) comprising: exclusive breastfeeding for the first six months and complementary feeding starting at six months; vitamin A supplementation; de-worming; using iodized salt; preventing and treating moderate under-nutrition as well as treating severe under-nutrition (without complications) with ready-to-use therapeutic feeds (RUTF). Some programs such as hygiene, zinc supplementation and iron supplementation are implemented **as part of other health promotion programs**. Due to **absence of a national policy and guidelines** on multi-micronutrient and staple fortification, these interventions are not implemented in Zambia. Iodized oil use is not supported by law, as it is only promoted in the absence of iodized salt.

- **Inadequate supplies, job aides and equipment** such as manuals, posters, Salter scales, and weighing bags impede application of knowledge acquired from training and execution of

[1] *Community Health Workers Manual Integrated Handbook: A reference manual for Integrated Care Handbook (2009). On page 18, CHW is defined as a volunteer who is selected by the community and trained in certain aspects of health to serve the same local community. The term "CHW" may be used interchangeably with the term "volunteer".*

activities. These need to be provided as part of the training and afterward when the CHW starts the work in the community.

- **Absence of guidelines** on the use of CHWs has led to high turnover. CHWs felt unappreciated and unprotected as they have no channel for raising complaints or seeking redress if they are abused or harmed. It is urgent for the government to formalize guidelines to guide operations and provision of incentives to these volunteers. There is also need to have one government district focal point person to coordinate activities at the community level.

- **Sustainability of the interventions** is influenced by a number of factors including training of health staff and CHWs, and harmonization of activities implemented at the community level. In order to effectively sustain activities, a critical mass of people is required, and they should have the appropriate capacity to transfer knowledge onto others.

- **Supervision and mentorship** were limited due to inadequate trained staff. This was compounded by absence of indicators to track progress with regard to health and nutrition achievements at the implementation level. There is need to identify and define the means of verifying progress of a CHW's achievements in the community as a result from her/his training. Some health and nutrition indicators (such as exclusive breast feeding for the first six months or low birth weight) could be selected for monitoring at the community level.

- **The acknowledgment of the Positive Deviance (PD)-Hearth** concept for nutrition demonstrations indicates the desire to rely on local solutions for addressing nutrition problems within the local context. Nonetheless, the manner in which the concept is applied signifies that unstandardized messages are being disseminated in communities. The PD-Hearth model is designed to address nutrition problems by applying positive practices in a specific location, where food security is assured. It is important that guidelines developed by the NFNC are disseminated to apply uniform standards on the application of the PD-Hearth concept where this will be applied.

# 1. INTRODUCTION

Malnutrition is a public health concern in Zambia. Stunting of 45.4 percent (Central Statistics Office [CSO], 2009) in children below the age of five years is an indication of a significant problem in the larger population. To address malnutrition, more attention is now being paid to implementing nutrition activities in an integrated manner.

The United Nations (UN) General Assembly under the Scaling Up of Nutrition (SUN) recommends the implementation of 13 high impact interventions as critical in reducing malnutrition. These interventions include: (1) exclusive breastfeeding for the first six months, (2) complementary feeding starting at six months, (3) vitamin A supplementation, (4) hygiene, (5) zinc supplementation, (6) multi-micronutrient fortification, (7) de-worming, (8) iron supplementation, (9) iodized oil utilization, (10) salt iodization, (11) staple fortification, (12) prevention and treatment of moderate under-nutrition, and (13) treatment of severe under-nutrition without complications with RUTFs (UN General Assembly, 2011). High impact nutrition interventions have been endorsed based on evidence from studies that demonstrated the positive impact with regard to intervening early in addressing under-nutrition (Hodditt et al, 2008). The UN General Assembly also recommends a multi-sectoral approach that supports a combination of interventions to address malnutrition. The Lancet series also underscores these interventions as critical for maternal and child under-nutrition and survival (Bhutta et al, 2008). To reduce malnutrition particularly among children below the age of five years, Zambia is promoting the implementation of high impact nutrition interventions at community level.

To better understand initiatives to address malnutrition in Zambia, this report presents findings of a review on high impact community nutrition interventions supported under the MOH. The report is presented in five sections: introduction, background and justification, the process that was followed to obtain data on nutrition interventions, findings, implication of findings, and conclusions and recommendations.

# 2. BACKGROUND

In Zambia, under-nutrition contributes to a high disease burden, especially among children below the age of five years. Chronic malnutrition in this age group accounts for 45.4 percent stunting, five percent acute malnutrition (wasting) and 14.6 percent underweight (CSO, 2009). In addition, 53 percent of children in Zambia are affected by vitamin A deficiency, and 46 percent suffer from iron deficiency anemia (NFNC, 2003). According to the body mass index indicator (BMI below 18.5), under-nutrition among women in the reproductive age is common (9.6 percent). Malnutrition is a problem due to multiple causes, influenced by numerous factors including inadequate food intake, poor sanitation and hygiene and unfavorable health conditions. Due to inequitable access to socio-economic services, under-nutrition is more pronounced in rural than urban communities (CSO, 2009).

An analysis of the past two Demographic Health Surveys (2001/2 and 2006/7) reflects slight changes in under-nutrition among children below the age of five years, attributed to an intensified focus on child health and nutrition interventions. Underweight was reduced from 23 to 14.6 percent, stunting from 53 to 45.4 percent, while severe malnutrition has remained static (five percent). Severely malnourished children are more at risk (five to 20 times) of dying compared to well-nourished children. If such children are admitted to the hospital, they also have only a 50 percent chance to survive (WHO, 2003).

The high malnutrition rates among children are an indication that many individuals do not reach their developmental potential. Stunting in childhood manifests in short stature and corresponding poor productivity later in life. One percent loss in adult height due to childhood stunting is related to 1.4 percent reduction in productivity. As malnutrition results in poor cognitive development, poor school performance and increased health costs (World Bank, 2006), implementing interventions that prevent the problem is important for long term individual and national development.

Currently, there are generally limited data on the type and performance of high impact community nutrition interventions implemented in Zambia by the MOH. This is partly attributed to inadequate information shared on experiences, lessons learned and application of nutrition interventions that have demonstrated impact on communities or indicators that can be monitored across sectors. In the absence of adequate information, it is challenging for the MOH to plan and apply nutrition strategies according to specific needs at the district level. With this in mind, a review of community-based high impact nutrition interventions was undertaken in December 2011.

## 2.1 Policy considerations

In addressing the problem of malnutrition, the Zambian government has acknowledged the need to focus more on the reducing prevalence rates in the country. The nutrition objective in the National Health Strategic Plan (NHSP) 2011-2015 puts emphasis on improving "*the nutritional status of the population and ensuring food safety, particularly for children, adolescents and mothers in child bearing age, so as to prevent disease*" (MOH, 2009). While the NHSP focuses on specific aspects for improving nutrition, the Food and Nutrition Policy which recognizes malnutrition as a major challenge to development, highlights areas of attention for implementing nutrition programs (MOH, 2006). The corresponding Food and Nutrition Policy implementation plan spearheaded by the NFNC outlines how to address the problem both at the national and community levels. In addition, the NFNC has prepared a multi-sectoral National Food and Nutrition Strategic Plan for 2011-2015 focusing on critical areas for addressing under-nutrition (NFNC, 2010). The plan highlights 11 strategic areas with a strong emphasis on the first eight core areas:

1. 1000 most critical days: prevention of stunting in children under two years of age;

2. Increasing micronutrient and macronutrient availability, accessibility and utilization by improving food and nutrition security;
3. Early identification, treatment and follow-up of acute malnutrition;
4. Nutrition education and nutritious feeding through schools;
5. Increasing linkages among hygiene, sanitation, infection control and nutrition;
6. Food and nutrition to mitigate effects of HIV and AIDS;
7. Improving food and nutrition to prevent and control non-communicable diseases; and
8. Food and nutrition preparedness and response to emergencies.

Other strategies include:

1. Strengthening governance and capacity building in support of food and nutrition interventions;
2. Monitoring, evaluation and research of food and nutrition interventions to support improvement and expansion; and
3. Expanding communication and advocacy in support of nutrition interventions.

Addressing the malnutrition problem also requires consideration of other factors. For example, when implementing community level interventions, trained health staff and CHWs are equally important in promoting certain practices such as breastfeeding (McCormick et al, 2007). Community involvement also means finding ways of empowering communities to maintain acquired practices that promote health. In this context, community nutrition interventions play a critical role in reducing malnutrition.

Community-based interventions refer to activities that take place within the community, with a social group of people residing in a specific locality and share similar experiences such as a common culture and historical heritage or government (Ismail, 2003). Community-based interventions originate from the primary health care concept premised on active involvement and participation of the people at the community level and reliable health system support with emphasis on equitable development. This concept is emulated in the Millennium Development Goals and supports the translation of the Global Strategy for IYCF (UNICEF/WHO, 2003). Recognizing the shortage of trained health staff at community level, the MOH has created a national CHW program to reposition and expand the CHW cadre (MOH, 2010).

In Zambia, community work is dependent on CHWs/volunteers selected by the community and trained to serve in the same local community. Their functions include distributing contraceptives and oral rehydration salts; monitoring children's growth, immunizations and progress of illnesses; record keeping; providing nutrition education; and performing first aid. CHWs also conduct home visits and assess community risk factors and health problems. CHWs also inform their health facilities about public health problems occurring in their communities that require immediate attention by the health authorities (MOH, 2009). Going by the above functions, a CHW is a critical pillar in the provision of services at the community level.

## 2.2 Justification for the review

As part of the 1992 health sector reforms, the government of Zambia acknowledged the need *to provide the people of Zambia with equity of access to cost-effective, quality health care as close to the family as possible.* These reforms underpin the decentralization of services and responsibilities from the central level to districts and hospitals and ultimately the communities (MOH, 2009). High impact nutrition interventions are promoted at the community level, and CHWs play a critical role in implementing these interventions.

These types of community nutrition interventions can be an important avenue for reducing malnutrition, if properly designed and implemented. In Zambia, a number of partners are involved in implementing

high impact community nutrition interventions but it has been difficult to access information on what they do, the type of interventions they provide, their location and coverage, lessons learned, successes or the impact of such interventions at community level. This results in challenges for the MOH to plan or leverage resources and build on what has been achieved, particularly to scale up effective interventions.

# 3 REVIEW PROCESS

**Objective**:

- To review and document experiences and lessons learned in implementing community-based high impact nutrition programs in selected districts.

## 3.1 Methods for data collection

To realize the objective of the review, data were derived from literature of available documents and key informant interviews. The first approach was to review existing literature to identify the recommended high impact community nutrition interventions that are being implemented, partners involved, and locations where such interventions are being implemented. Key literature included MOH documents, Essential Nutrition Actions, Reach Every District (RED) Strategy Situation Analysis Report (2011), NHSP 2011-2015, National Nutrition Strategic Plan 2011-2015, the National Food and Nutrition Policy and Implementation Guidelines, progress reports from ZISSP, and profiles of cooperating partners supporting nutrition interventions. The literature provided the basis for identifying high impact community nutrition interventions that are being implemented, gaps in implementation, linkages, and partners and communities supporting such interventions at the community level. The literature review also guided the development of the key informant interview checklist for obtaining data in the field.

Qualitative techniques were relied upon for data collection. Key informant interviews using a guide (Appendix 7.2) were conducted at the central level with representatives from MOH, ZISSP, NFNC, UNICEF, Care International, and Save the Children. Interviews involving key staff from the provincial and district health offices were conducted in Ndola, Masaiti and Livingstone as well as with health staff from Fiwale, Kafulafuta and Simango rural health centers and Matero Reference Clinic. One community group discussion involving representatives from mother support groups, health counselors and Safe Motherhood Action Groups (SMAGs) was conducted at Matero Reference Clinic in Lusaka. Community interviews were also conducted in Fiwale and Kafulafuta catchment areas. Interviews involved interactive discussions, in which information was provided openly.

As participatory approaches rely on obtaining data from participants who are willing to provide information, the sample size was determined by theoretical saturation[2] (Ezzy, 2002). Locations were also purposively selected to allow for a diversity of communities where interventions were implemented (Table 1). The review was conducted from December 2011 to January 2012.

[2] The same information repeatedly echoed by respondents during interviews.

**Table 1: Data collection locations**

| Location | Central and Community Interviews |
|---|---|
| Copper-belt Province – Masaiti district, Fiwale and Kafulafuta Mission rural health centers | Central and community interviews |
| Southern Province – Livingstone, Kazungula, Simango rural health centers | Central and community interviews |
| Lusaka Province – Lusaka MOH headquarters and Matero Reference Health Center | Central and community interviews |

Documents that were made available and key informant interviews provided evidence on high impact community nutrition interventions, as well as the data for analysis.

## 3.2 Data analysis

Analysis began while data were being generated to ensure that relevant information captured was documented. Notes were entered into the computer as soon as possible. While computer programs such as ATLAS.ti are available for organizing qualitative data for analysis, in this review, matrices were developed in MS Word. Reading through the text repeatedly as recommended by Creswell (2003) was relied upon to identify themes and avoid missing important points. This initiative assisted in identifying sub-themes that needed further clarification in subsequent interviews. This also helped to draw a picture of support given to implementing high impact nutrition interventions at the community level.

Matrices guided the organization, synthesis and analysis of data. These data were the basis for identifying lessons learned, strengths, weaknesses, gaps and constraints as well as making recommendations for improving implementation of high impact nutrition interventions at community level.

# 4 FINDINGS

## 4.1 Type of interventions

In identifying high impact community nutrition interventions, the consultant referred to the UN General Assembly campaign for improving nutritional status, which advocates implementation of 13 high impact nutrition interventions (Table 2). The focus of these interventions is to reduce malnutrition particularly among women, children and their families. The NHSP, the National Food and Nutrition Policy, and the IYCF Strategy all underline pregnancy and early childhood as critical stages in the life cycle for nutrition intervention. In Zambia, the 13 high impact community nutrition interventions fall into three categories: (1) frequently implemented interventions; (2) interventions integrated with other programs; and (3) interventions unsupported by national policy.

## 4.2 High impact nutrition interventions frequently implemented

Frequently implemented high impact community nutrition interventions are: (1) exclusive breastfeeding, (2) complementary feeding, (3) vitamin A supplementation, (4) de-worming, and (5) salt iodination. These interventions attract the most support from the government and other partners.

### 4.2.1 Infant and young child feeding

The IYCF program comprises two interventions: exclusive breastfeeding for the first six months and introduction of complementary feeding at six months. The focus of IYCF interventions is to promote the health of children through improved feeding practices. Currently activities in IYCF focus on training and mentorship. In Matero-Lusaka, trained mother support group volunteers play a critical role in promoting IYCF activities at community level.

Community-based growth monitoring and promotion (CBGMP) is one of the tools used for monitoring and promoting child health at the community level and is the entry point for the IYCF intervention. It helps to identify children who need support either within the community or referral to the health facility. In communities where supplementary feeding is provided to treat under-nutrition, CBGMP is used to screen children and provide them with the necessary care (e.g., identify those who require food supplementation, refer to the health facility for further support, or exit the food supplementation program after the required health status has been achieved). Effective utilization of CBGMP is hampered by a number of factors. These include:

1) Limited access to scales and weighing bags at community level to allow CHWs to take weight measurements and screen children;
2) Inadequate trained CHWs resulting in poor screening (taking inaccurate weight measurements and incorrect interpretation of measurements) and failure to correctly identify children that require additional support;
3) CHWs overwhelmed with large numbers of children requiring screening; and
4) Shortage of trained health staff to supervise and mentor CHWs.

#### 4.2.1.1 Strengths of the intervention

Training of volunteers by the MOH and partners such as ZISSP and Valid International has provided an opportunity for improving knowledge and adoption of improved feeding practices that contribute to reducing malnutrition. The IYCF capacity building efforts at national level have resulted in training 122 health staff and 165 CHWs who have in turn trained 566 community members in selected districts

across the country. In addition, 294 CHWs have been trained in breast milk substitutes and iodine deficiency disorders in Lusaka province (MOH, Nutrition Unit, 2011). Out of the total number trained in IYCF, ZISSP trained 73 health workers and 150 CHWs in Solwezi, Minilunga, Masaiti, Mbala and Mpika districts (ZISSP progress report, 2011).

In the Copperbelt, IYCF trainers of training was conducted in 2011 for Ndola, Masaiti, Luanshya, Chingola, and Mufulira districts involving 30 health staff and CHWs. In Mpongwe district, training was extended to only health staff. In Masaiti district, each health facility has one trained health staff, six trained health workers and four volunteers who spearhead IYCF activities in the communities. The training was provided by MOH in collaboration with ZISSP. Though the training was only conducted in September 2011, health staff and community members expressed satisfaction at the changes that are taking place in their communities with regard to nutrition feeding practices of their children. Although information from key informant interviews was not corroborated with records at local health facilities, community members indicated that they believe that changes in feeding practices have contributed to a reduction in the number of malnourished children by almost half in Kafulafuta and Fiwale locations, where the IYCF intervention is implemented. However, the perceived reduction in malnutrition should be interpreted with caution. Respondents might only be providing a positive picture to impress the consultant.

CHWs believed that improved feeding practices would be sustained as they were not only giving support to caregivers but were also training pregnant women in IYCF. The need for refresher courses to keep abreast with new ideas was proposed by CHWs as the best way for sustaining improved feeding practices. An example was given about feeding children in the context of HIV, with regard to the change in the duration of breastfeeding from six months to one year as recommended by WHO in 2009. The importance of new knowledge was emphasized by a CHW in charge of nutrition demonstrations in Chinkuyu community:

> Learning never stops, it is important to have refresher courses to be able to advise others adequately.

A CHW explained to the consultant that diarrheal cases among children below the age of two years were reduced due to improvements in feeding practices brought about by the IYCF intervention. In Chinkuyu in Masaiti district and Simango in Kazungula district where reasons for any child referred to the health center were routinely documented at community level by CHWs, records did not show any referrals for diarrhea cases for at least two weeks before the review. CHWs further explained that caregivers were not only acquiring knowledge in improved feeding practices, but they were also learning about food and personal hygiene, water and sanitation. CHWs believed that knowledge gained during nutrition education sessions would be sustained as demonstrations were based on locally available food products acceptable within the local socio-cultural context. At the time of the review, partners such as Child Fund, Save the Children, World Vision, and ZISSP, were supporting the IYCF intervention in the community. Positive changes associated with implementation of the IYCF intervention at the community level include:

- Demand created for intensified CBGMP and health checks. Children requiring attention were identified and supported. During field visits, CHWs were observed screening children for malnutrition and counseling mothers who needed support.
- Health care workers were trained in identifying and counseling caregivers on improved feeding practices. In Masaiti, one of the locations, IYCF training has transformed caregivers' thinking. One key informant expressed her enthusiasm with confidence.

> Our children are fed better than before the training. There are little things that we have learned that we did not know before.

- The referral system between the community and the health facility has been strengthened for children requiring care and support. In Chinkuyu community, the Fiwale health center catchment area of Masaiti district, communities have registers and referral forms specifying the type of support provided to children within the community or at the health center. This arrangement has improved collaboration between the community and health facility in supporting caregivers.

#### 4.2.1.2 Challenges

Despite the observed improvements at community level, the review noted a number of challenges. While at provincial level nutritionists were available to support programs, the majority (over 80 percent) of districts in the country do not have nutritionists to coordinate nutrition-related activities. Absence of nutritionists in some districts was a result of misplacement, arising from the incomplete restructuring process within the MOH. Some districts had more than one nutritionist, while others had none. Recently, the Nutrition Unit within the MOH acknowledged that inadequate job descriptions and orientation have led to nutritionists performing functions that they were not trained for, for example, being requested to take on administrative functions for which they needed short-term bridging courses.

In Masaiti, the District Health Office was concerned about the absence of an appropriately trained officer as a nutrition focal point to monitor and report on nutrition activities. It was felt that this limitation threatened sustaining and extending the current IYCF achievements to other communities. Absence of a trained district nutritionist also implied nutrition activities are inadequately articulated in district plans. The District Health Office further explained that although the Maternal Child Health (MCH) Unit provides support to nutrition, the unit is primarily concerned with monitoring and reporting on indicators under their mandate and that these do not focus on nutrition activities. At the time of the review, the Masaiti District Health Office was in the process of requesting the provincial office to assign a nutritionist to assist in coordinating nutrition activities within the district.

Lacking necessary nutrition expertise is not limited to relevant government departments, but also in some key programs in Zambia such as ZISSP, which also suffers from a lack of expertise necessary to spearhead nutrition interventions. Officers trained in other fields are often delegated to perform nutrition programming functions. There is often an incorrect assumption that all that is necessary to successfully design and implement nutrition-related interventions is for a health staff person to have a short training in nutrition or if someone has had some experience in one health intervention, s/he can also perform functions of a professional nutritionist.

### 4.2.2 Vitamin A supplementation

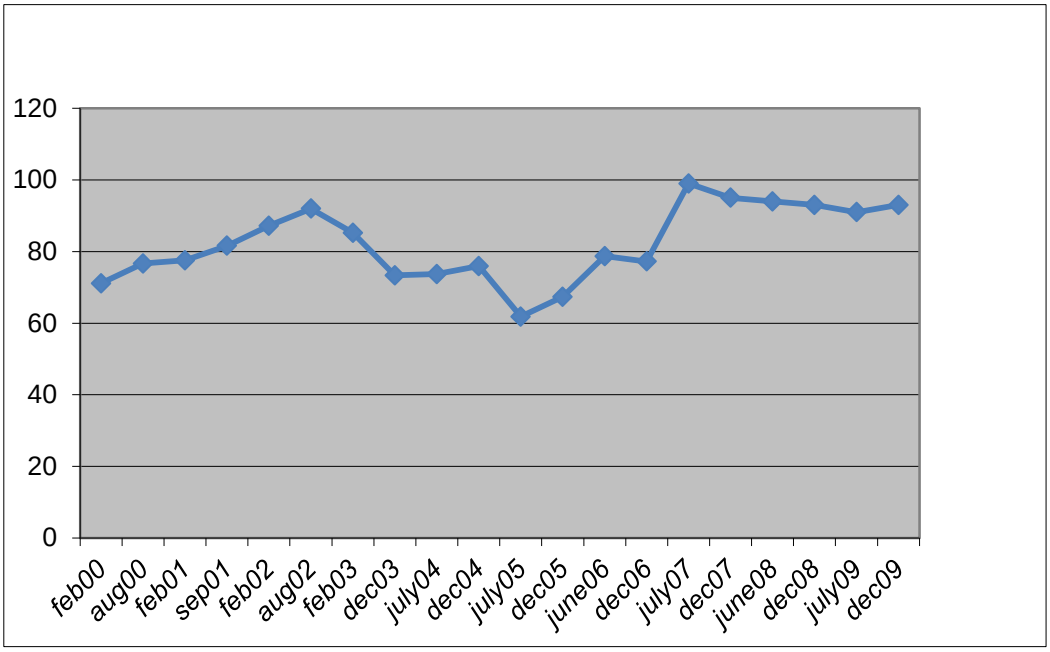
The thrust of vitamin A supplementation is to reduce child mortality and diseases, in particular due to measles. The intervention focuses on children from six to 59 months of age. The main strategy for delivering vitamin A and de-worming is organized as a bi-annual national event under the theme "Child Health Week". During Child Health Week, even children who have not received routine services such as growth monitoring and immunizations are encouraged to come for these services. During this week, community volunteers perform the role of administering the vitamin A supplement.

#### 4.2.2.1 Strength of the intervention

Vitamin A coverage has fluctuated between 90 to 100 percent since 2007 (Figure 1). Vitamin A supplementation coverage of over 90 percent is associated with reduced measles in children (Coutsoudis, 1991). In acknowledging the benefits of vitamin A supplementation for child health promotion, the MOH and partners allocate resources to ensure that vitamin A intervention is nationally sustained.

Although the focus of the Child Health Week is on vitamin A supplementation, this event presents an entry point for linkages to other interventions such as de-worming, reproductive health, hygiene, health and nutrition education. It serves as a platform for identifying, referring and managing child under-nutrition problems. The success of the vitamin A supplementation program is attributed to the collaboration between the health staff and trained CHWs. While health staff are in charge of ensuring that supplies are available and delivered as prescribed, CHWs assist with community mobilization, weighing of children, distribution of vitamin A capsules and also render support to nutrition and health education activities. During the review, both health staff and CHWs confirmed their active participation in the activities of the Child Health Week.

Figure 1: National Coverage of Vitamin A, from 2000 to 2009




Source: NFNC (2010), Vitamin A Bi-annual Supplementation Coverage

#### 4.2.2.2 Challenges

A number of problems associated with implementation of the vitamin A supplementation program were noted during the review by key informant interviews. These include:

(a) *Stock imbalances*: The amount of the supplement allocated for distribution is calculated according to the figures from the CSO for the target group (six – 59 months). Informants indicated that at times, there were stock imbalances with some health facilities having more stock than others. In other cases, the head count exceeded the allocated CSO estimates resulting in some children not receiving any vitamin A supplement.

(b) *Data capture and documentation*: A concern was raised that data generated during the Child Health Week were not entered on time into computers by staff at health centers. This often resulted in delaying the sending of data to the central level for analysis and incorporation into the national Health Information Management System (HIMS). One officer from NFNC was responsible for updating the vitamin A and de-worming databases as well as ensuring that data from various locations are brought to the central level for harmonization and analysis. As the same officer is in-charge of other programs, this situation underlines a critical shortage of technical staff to keep updated records on vitamin A and de-worming in a timely manner. The database for the years 2010 and 2011 was being updated during the review.

(c) *Missed opportunities:* Taking advantage of the Child Health Week to deliver routine services to the target children (including those who missed routine services) has contributed to providing integrated services. However, this integration has led to other unintended shortcomings:

- The increase in the number of services provided without a corresponding rise in the number of trained health staff and CHWs has contributed to an increased work-load of existing health staff and CHWs working in the community.
- There is extra pressure on CHWs to capture and document data, often leading to delays in transferring data to the central level for analysis and dissemination.
- Child Health Week has led to marginalization of routine services provided through outreach programs (e.g., immunizations and community supervision of CBGMP). Informants stated that at times health staff didn't use the money meant for outreach to use during Child Health Week but saved it. For routine services such as immunizations, which have to be administered at specific times, waiting for this special week re-enforces the wrong message. In addition, the Child Health Week is catered for under a separate budget. Taking away resources budgeted for routine services might compromise the delivery of quality routine services at health centers.
- Informants reported that a change in the financial administration of Child Health Week has led to a delayed release of funds and a reduction in the amount disbursed. In previous years, funds for training and organizing the Child Health Week were disbursed jointly by the MOH and NFNC to districts. Since 2010, devolvement in administration of financial support meant that districts received money for vitamin A activities directly from the MOH through the donor basket funding mechanism. Direct funding was intended to give more authority to districts to plan and budget for activities. One respondent explained that these recent observations might contribute to poorer quality of services delivered during the Child Health Week by health staff and CHWs.
- The vitamin A supplement is at times administered un-hygienically, as packaging does not always allow for individual dosages. In situations whereby contents in a container are to be shared among a number of children, absence of opening tools may mean unhygienic handling of the vitamin.

### 4.2.3 Community management of under-nutrition

Under-nutrition has three indicators, stunting, underweight and wasting, that are monitored. Due to difficulties related to taking weight and height measurements, screening for stunting is not routine in Zambia, neither at community or health facility levels. The management of malnutrition at community level is classified under two categories: (1) prevention or treatment for moderate under-nutrition, and (2) treatment with RUTF for severe under-nutrition (severe acute malnutrition) without complications. The focus of the first intervention is to stop deterioration of health and encourage early case identification and reduce mortality. The management of acute under-nutrition without complications provides a continuum of care focusing on both in-patients and outpatients in an integrated approach.

This approach seeks to engage the family, community and health facility in providing care and support to children who have been discharged after treatment from a health facility.

Children under community management of acute malnutrition (CMAM) are regularly checked to monitor their health and identify those who need further support. At the community level, presence of edema and measuring mid-upper arm circumference are used to identify those who need support. For children who are receiving care and support under the management of under-nutrition (without complications) with RUTF, the full package of CMAM includes an additional indicator (re-admission after defaulting).

#### 4.2.3.1 Strengths of the intervention

Like other community interventions, the CMAM is supported by existing structures such as Neighborhood Health Committees, traditional birth attendants, nutrition groups, political structures, as well as trained CHWs. The continuum of care involving the health facility and community referral contact points ensures that caregivers are supported on a continuous basis. The program also incorporates a strong component on nutrition education. Under this component, nutrition demonstrations are conducted to equip caregivers with knowledge on meal preparations based on what is available at the household level. In some communities, the PD-Hearth concept[3] is used for nutrition demonstrations to support CMAM, particularly in locations where the IYCF intervention is being implemented.

In many communities, poverty is one of the major factors contributing to acute malnutrition among children. In creating opportunities for improved food security and general socio-economic conditions at the household level, caregivers are trained in income generating activities which can help them engage in activities that could enhance food availability at household level and reduce malnutrition among children. Children tend to experience relapses when they are discharged into the community where the local food situation remains unchanged (World Bank, 2006).

#### 4.2.3.2 Challenges

A number of problems were observed regarding the implementation of CMAM. Although CHWs were involved in other community interventions such as home visits and health counseling, under CMAM, CHWs also conducted early identification of children who needed care and support. In many situations, CHWs were overwhelmed with large numbers of children that required screening. In some cases CHWs were inadequately trained. These factors sometimes contributed to poor screening, incorrect interpretation of captured data or failure to correctly identify children that required additional support. Following-up children in the communities is critical in supporting children under CMAM.

Some communities lacked proper registers for documenting progress on treatment. In communities (such as Luangwa) where records were well documented, children were easily followed-up with health checks and immunization schedules. In the absence of proper records, it was often more challenging for health staff from the central level to determine which children received support from the health facility and which from community interventions. If the documentation was inadequate, a logical assumption would indicate that whatever information was collected on coverage of an intervention at community level may well be misleading. For instance, while national coverage may focus on the number of children in the target population (six – 59 months) which is calculated at 18 percent of the population (the denominator), to correctly determine community coverage requires accurate documenting of the total

[3] PD-Hearth: learning positive feeding practices within the community and making use of foods and utensils that are locally available.

number of children in the target group in that particular community as the denominator. Methods for analyzing coverage of nutrition programs are available in existing literature (Myatt, 2008).

Key informants revealed that some caregivers take their undernourished children for community checks expecting to be referred for RUTF. Other caregivers were apprehensive, fearing ridicule for presenting an undernourished child. It appears there is still a great need to educate communities about the importance of taking their children for CBGMP and addressing the problem of under-nutrition early. There was a general feeling at the community level that if food was not provided, then children should be referred to a health facility, where RUTF was offered. This thinking undermines the importance of community screening for providing care as close to the household as possible.

In Lusaka communities, shortages of plumpy-nut, particularly after the end of Valid International's project on community treatment of under-nutrition with plumpy-nut in Lusaka, contributed to less engagement from CHWs to caregivers whose children are discharged after treatment for malnutrition. When plumpy-nut is not available, caregivers are unwilling to attend nutrition clinic days and were not receptive to a CHW's home visit. Plumpy-nut is imported into the country. Due to logistical problems, sometimes it has been unavailable. As there is a great need for plumpy-nut or something similar in nutritive value, ways of producing a similar local product should be explored to address problems of shortages related to importation and sustainability, as this has budgetary implications for the government. There is need to identify or develop a local product to replace plumpy-nut in the treatment of malnutrition. Producing a local product to replace imported plumpy-nut would have many benefits, including putting money in the hands of the local people and improving their overall economic situation. The government would also save funds that may be used to improve delivery of other important services or for development projects in the communities.

In supporting mothers to improve child feeding practices, the PD-Hearth concept was applied for nutrition education. This concept relies on learning from positive role models within the community and operates in a food secure area. This also enhances sustaining the knowledge gained as it is based on familiar food experiences within the prevailing socio-economic context. However, this concept is not recommended in food insecure communities, as it may discourage households without food from participating in nutrition demonstrations. Guidelines on application of the PD-Hearth at community level are available at the NFNC.

## 4.3 High impact nutrition interventions intergraded in other programs

Some high impact community nutrition interventions are implemented as part of a public health strategy in the country to improve national health conditions or as part of other interventions for public health promotion. In the review, interventions falling under this category are discussed below.

### 4.3.1 Zinc administration

Zinc administration is covered under integrated management of childhood illness (IMCI) and is administered at the health facility level for diarrhea management to reduce the duration and severity of episodes. At the time of the review, zinc was not part of the essential drug kit for health centers. District offices made separate requests for zinc supplies from medical stores. This frequently led to erratic supplies of zinc in health centers, particularly in the more remote areas. It is important that the MOH provides more information on zinc acquisition to District Health Offices to enhance its accessibility by all health facilities.

### 4.3.2 Hygiene

Hygiene is covered as part of integrated services with other interventions, including IYCF, vitamin A supplementation, de-worming and reproductive health. Hygiene in the IYCF package is a critical consideration especially during the period when complementary feeding is introduced. At the community level, hygiene is discussed in individual or group education as part of health promotion topics covered. Environmental Health Technicians, who work with CHWs at community level, cover this topic extensively.

### 4.3.3 Salt iodization

The national policy in Zambia focuses on ensuring that only iodized salt is available for household consumption. Until two years ago, the NFNC provided equipment and other materials for iodination of locally produced salt in remote locations such as Kasempa in Northwestern Province and Kaputa in Northern Province, the only locations where salt (not iodized) is mined by local people. NFNC has discontinued this support. Monitoring iodine in salt by the Zambia Bureau of Standards surveillance team has also deteriorated and is constrained by the erratic supply of imported testing kits. According to NFNC (2003), iodized salt surveillance activities in districts and at border posts have contributed to high consumption (77%) of iodized salt. However, there is need for current data to establish the prevailing situation with regard to iodized salt consumption levels. Although by law only iodized salt is supposed to be sold to the public for household consumption, due to insufficient monitoring, it is likely that some people are not consuming adequate amounts of iodine, particularly in areas where salt is mined. It is possible that people producing their own salt in rural areas of Kaputa and Kasempa districts may not be iodizing it. Nonetheless, in the areas visited, key informants indicated that households were consuming iodized salt purchased from local shops. Current data on consumption levels of iodized salt are required because this has implications for an individual's overall health and developmental status.

### 4.3.4 Iron supplementation

Iron supplementation is part of reproductive health services provided during antenatal clinic visits. Opportunities for supporting iron supplementation through the Safe Motherhood Action Groups (SMAGs) exist in the communities. Under outreach activities, staff members from health facilities provide iron and folate to pregnant women at community level. Generally, women who have access to antenatal services at health facilities do receive folic acid. Iron supplementation is also part of the IMCI case management protocol.

## 4.4 High impact nutrition interventions unsupported by policy

In Zambia, three of the high impact community nutrition interventions are not supported by national policy and/or guidelines and therefore not implemented. The National Food and Nutrition Policy document and guidelines are silent on the implementation of multi-micronutrient fortification, iodized oil utilization, and staple fortification (MOH, 2006). The Eastern, Central and Southern Africa (ECSA) Community for Health, a regional organization in Sub-Saharan Africa, in collaboration with the A-Z USAID funded project, developed standards for micronutrient fortification. These standards are yet to be adapted in Zambia. With regard to iodized oil utilization, this is promoted only in situations where salt iodization is absent. The current policy only supports fortification of cane sugar with vitamin A for household consumption.

Discussions on fortifying maize meal with multi-micronutrients at the commercial level have reached an advanced stage. The NFNC has provided the necessary technical support and laid the foundation for cereal fortification with the assistance from the Global Alliance for Improved Nutrition (GAIN). The

source for importing the fortificant has been identified; equipment has been procured; and commercial milling companies have agreed to fortify the maize meal flour without cost. However, commercial fortification of the staple is yet to be approved by policy makers.

## 4.5 Common challenges for community nutrition interventions

### 4.5.1 Availability of tools, job aides and supplies

Job aides such as guidelines, posters and counseling cards were not always available for use by CHWs at the community level. Therefore, appropriate job aides and mentoring tools need to be developed for many of the interventions being implemented and provided to the CHWs (Table 4).

Materials and equipment such as Salter scales and weighing bags are inadequately supplied by the MOH. National guidelines do not exist on distribution of materials and equipment for use by CHWs at the community level. Organizations such as UNICEF sometimes purchase and distribute equipment and materials to communities if requested either by the MOH or a particular community.

During the review, it was established that sometimes people queue for long periods before a child is weighed by a CHW. This puts a strain not only on these CHWs but also on the children and their caregivers. Scales and weighing bags are necessary for ensuring that what CHWs have learned is put into regular practice to avoid losing acquired skills and compromising standards of care being delivered. In the context of limited resources, linkages are important and need to be developed with other interventions to help leverage available resources. These linkages may involve organizations that are implementing nutrition interventions at the community level, such as Care International, World Vision and Save the Children.

**Table 4: Job aides/ training package at community level**

| High impact community nutrition intervention | Job aides/training package |
|---|---|
| IYCF (exclusive breastfeeding and complementary feeding) | • IYCF counseling tool<br>• Supervision and mentoring tools<br>• Training package and CHW manual |
| Improved hygiene | • Partly covered in IYCF training manual<br>• Environmental Health Technician training and CHW manuals |
| Vitamin A and de-worming | • Child Health Week training manual (not adapted for community use); facilitators and participants manual<br>• Partly covered in the IYCF counseling manual |
| Iron and folic supplementation | • SMAGs training manual (to be finalized) |
| Salt iodization | • No community training packages/guidelines |
| Prevention and treatment of moderate under nutrition | • WHO training manual (not adapted for use at the community level)<br>• Draft national CMAM guidelines |
| Treatment of severe under-nutrition without complications with RUTF | • Mid –upper arm circumference strips and scales<br>• Valid International package (outpatient therapeutic program) |

The reviewer noted that CHWs did not use a single standardized tool for screening under-nutrition at the community level. The mid-upper-arm circumference, z-scores or the direction of the curve on the

child health card was used for screening. The MOH has made an appeal to all community level implementers that they seek guidance from the MOH when developing materials. This will help materials to harmonize training messages and avoid sending conflicting or confusing information to communities. Non-availability of materials in the local language also made it difficult for CHWs to follow the same guidelines and maintain uniform acceptable standards of service in some communities.

### 4.5.2 Staff limitations

The shortage of trained health staff has led to a heavy reliance on CHWs. At the time of the review, there was only one nutritionist at the central MOH. Many organizations including ZISSP did not have a trained nutritionist for nutrition functions. The focus seems to be on implementing only a few interventions and taking a less holistic view to implementing nutrition interventions in a community. Many organizations including ZISSP, Care International and World Vision, are implementing IYCF interventions and supporting vitamin A supplementation activities because they have experience in these nutrition interventions.

At the community level, the shortage of trained CHWs meant that often screening to identify children requiring nutrition-related support was not conducted in a timely manner. This may have had implications for caregivers in distant locations, i.e., not receiving the support they needed. The review revealed a great demand for trained CHWs and the need to develop a critical mass of trained volunteers for spearheading community nutrition interventions.

Community-based structures such as Neighborhood Health Committees and other community-based organizations render support to communities according to their specific capacity and skills. This support was not extended to include nutrition activities. Health staff understood that Community Health Assistants, who were undergoing training, would provide the necessary relief for CHWs in implementing nutrition activities upon their graduation.

Discussions with key informants revealed that implementation of community interventions was affected by high drop-out rates of CHWs due to:

1. ***Lack of transport to reach distant places***: CHWs raised concern about their inability to reach distant locations. Some CHWs had bicycles from other health programs or activities that they were involved in such as the SMAGs. Although integration may call for using resources from other interventions being implemented in the community, CHWs indicated that many of the existing bicycles needed repair. Bicycles were supposed to be maintained by CHWs who were using them. However, the CHWs claimed that they could not find spare parts in the local market. According to CHWs from Lusaka, provision of bicycles without spare parts implied that the equipment was supposed to be used as long as the project that provided these was operational. After two years, bicycles were worn out and consequently, community visits were adversely affected as CHWs failed to walk long distances. This contributed to diminished enthusiasm for CHWs to engage in community work that was considered too far from home. In rural communities, sometimes CHWs had to walk over 15 kilometers to reach households that were within their catchment area.
2. ***Absence of guidelines on the use of CHWs for volunteer work*:** CHWs perform functions without the quality assurance mechanisms inherent within a standardized management scheme. CHW operations are not guided by any MOH approved scope of work, job description, standardized training or supportive supervision nor by remuneration, which are all basic principles in the delivery of quality services (MOH, 2010). There are also no guidelines on the use of CHWs for volunteer work, which may be a key contributing factor to the high volunteer (CHW) dropout rates.

In Lusaka, community group discussions with mothers' support groups, community health counselors and promoters emphasized that lack of government sanctioned guidelines makes CHWs feel apprehensive about doing community work because:

- In the absence of a channel for raising complaints related to abuse or compensation for harm, CHWs felt they did not have the necessary protection while performing their volunteer work.
- Development of a CHW policy has been proposed but there has been no response from the Community Liaison Officer at the district level.
- Although CHWs appreciated the value of research, they felt exploited. They felt the researchers' interests were only in using them for community mobilization and follow up. Respondents explained that despite the social harm which CHWs might be exposed to, researchers did not bother about the CHWs' plight. A particular example was given when one CHW was almost lynched by people when following up with a woman who was a subject in a study on "genital herpes and birth outcomes". CHWs felt that there have been too many studies conducted without feedback to communities. The health staff from Matero Reference Clinic confirmed the displeasure expressed by CHWs, since clinic staff had been receiving complaints from CHWs. During the group discussion, CHWs reiterated that the uncaring attitude of some researchers has contributed to some volunteers losing interest in community work. The health workers proposed that identifying a means to acknowledge or show appreciation to those engaged in community mobilization has to be explored and identified to restore the required confidence in researchers.
- In Lusaka, CHWs emphasized that the government should take responsibility over community interventions to avoid leaving a vacuum when a project executed by an external organization terminates. CHWs felt that if an intervention that people have taken to heart comes to an abrupt end, people are disappointed and may not take seriously subsequent programs that may be implemented in their community.

3. ***Overwhelming responsibilities:*** The respondents attributed the high dropout rate of CHWs to their being over burdened with responsibilities without equal attention paid to how best to motivate or compensate them. During a field visit to Kafulafuta, the consultant observed that a CHW was in charge of weighing all the children below the age of five years of age at the clinic. On the day of the visit, there were over 100 children waiting to be weighed. The same CHW was also responsible for weighing children at community sites. In Lusaka, CHWs indicated that they have reported public health problems to the health authorities, including disease epidemics and burst water pipes that required immediate attention by authorities. These observations were confirmed by health staff, to which CHWs reported such public health problems.
4. ***Lack of incentives: The*** review noted that lack of incentives such as remuneration and protective clothing was a problem that contributed to de-motivating CHWs. Generally, CHWs were and are not remunerated for their work. However, in one community in Fiwale, Masaiti district, a CHW working for a home-based care project was noted to receive an allowance of USD100 per month from one NGO (Churches Association of Zambia). In Lusaka, CHWs received varying amounts of cash ranging from K5,000 (one US dollar) to K60,000 (12 USD) per day depending on the organization that was in charge of the particular activity. Such gestures lead to demoralizing volunteers who are not paid any incentive allowance.
5. ***Limited access to income generating activities*:** At the Provincial Health Office in Ndola, poverty was cited as one of the underlying factors associated with relapses in undernourished children. It was proposed that households with undernourished children needed to be linked to

income generating activities as much as possible to involve families in sustainable livelihoods for improving their food security and welfare.

6. ***Non-implementation of community action:*** When community action plans, which were prepared by CHWs with community representatives, were not implemented, the result was that CHWs became unmotivated. CHWs felt unappreciated and discouraged for all the time spent working on the plans.
7. ***Inadequate community level supervision:*** The health staff indicated that where supportive supervision of CHWs was absent, for instance where there was inadequate follow-up after training, CHWs found it difficult to correctly apply all that they learned to improve their practices without additional support that accompanies supportive supervision.
8. ***Lack of funding for community work:*** There was no formal arrangement for funding community interventions. Lack of funding for community work has contributed to frustrations on the part of CHWs and their being able to sustain implementation of interventions.

## 4.6 Stakeholder mapping of community nutrition implementers

The intensity and number of locations for implementing community nutrition interventions ranged from one location in a district to national coverage. Table 2 summarizes the 13 high impact community interventions, implementers and geographical coverage. Integrated implementation of community level interventions is encouraged to allow for better leveraging of resources and extending coverage.

**Table 2: High impact community nutrition interventions and their coverage**

| Intervention | Implementer | Geographical coverage |
|---|---|---|
| 1. IYCF (exclusive breastfeeding and complementary feeding | MOH/NFNC | National coverage at health facility |
| | Breastfeeding Association of Zambia | Southern and Western Provinces |
| | Catholic Relief Services | Southern Province |
| | Center for Infectious Disease Research in Zambia (CIDRZ) | Southern Province |
| | Care International | Southern Province |
| | Concern International | Western Province in Kaoma District only |
| | JICA | Lusaka Province |
| | Elizabeth Glaser | Lusaka Province |
| | Plan International | Western Province |
| | Save the Children Fund | Copperbelt Province |
| | ZISSP | Copperbelt Province<br>Luapula Province<br>Northern Province |
| 2. Vitamin A | MOH, NFNC, UNICEF, World Vision, WHO, ZISSP | National |
| 3. Hygiene | MOH, ZISSP | National and in all districts |
| 4. Zinc supplementation | MOH | Health facilities |
| 5 Multi-micronutrient fortification | Not implemented | Not tracked |
| 6. De-worming | MOH, NFNC, UNICEF, ZISSP | National and in all districts |
| | Care International, World Vision | Southern Province |
| 7. Iron supplementation | MOH | National and in all districts |

| | | |
|---|---|---|
| (antenatal and under five) | Care International | Southern Province |
| 8. Iodized oil utilization | Not implemented | Not tracked |
| 9. Salt iodization | MOH/NFNC | National |
| 10. Staple fortification | Not implemented | Not tracked |
| 11. Prevention and treatment - moderate under-nutrition | MOH, UNICEF | National in all districts |
| | Care International | Southern Province in all districts |
| | WFP | Lusaka |
| 12.Treatment of acute malnutrition without complications with RUTF | UNICEF | National |
| | Care International | Selected communities in Southern Province, Eastern Province, Western Province |
| | MOH | Southern Province in five districts: Choma, Namwala, Gwembe, Kazungula and Livingstone<br>Northwestern – Solwezi<br>Copperbelt – Ndola<br>Eastern Province – Lundazi and Chipata<br>Lusaka Province |

## 4.7. Linkages to other supporting interventions

CBGMP provides a strategic entry point for nutrition interventions at the community level, supports screening of children for support either within the community or referral to a health facility, and provides the link to reducing malnutrition, promoting IMCI and expanding immunization for children and safe motherhood activities. At the local level, trained CHWs assist health staff to provide services at community level in nutrition and other related interventions, which include: (1) the RED strategy, (2) nutrition education, (3) nutrition and HIV, and (4) IMCI.

### 4.7.1 Reaching Every Child in Every District strategy

At the community level, the RED strategy aims at improving health through immunization to protect the child from vaccine preventable diseases and other common childhood illnesses. The bulk of the work under this strategy focuses on growth monitoring and promotion (GMP), vitamin A supplementation, de-worming and counseling on IYCF. CHWs are responsible for checking that the children are regularly weighed and that immunizations are up-to-date. Nutrition education is also offered. However, due to shortages of staff, outreach activities do not have a full complement of staff. Considering the competing health problems at the community level, respondents suggested that a full outreach team should be composed of at least four community members, a general nurse, a clinical officer, a health promoter (Environmental Health Technician), a nutritionist and an ART officer to provide the necessary support to communities.

### 4.7.2 Nutrition education

At the community level, the PD-Hearth concept is increasingly being applied in nutrition education. Care International has particularly been spearheading nutrition education and management of malnutrition using the PD-Hearth concept.

Caregivers are encouraged to participate in nutrition demonstrations using the PD-Hearth model. This model allows for community learning by focusing on examples of thriving children in the community and using locally produced foods for nutrition demonstrations. This method of nutrition education allows for managing under-nutrition with locally available resources at the community level. Organizations such as Catholic Relief Services, Care International, Plan International and the USAID-funded Health Services and Systems Program (HSSP), used this model for nutrition demonstrations at community level. Organizations involved in PD-Hearth train volunteers to support the practice.

One finding from the review was that there was a discrepancy in how the model has been applied. Some organizations provide the food for nutrition demonstrations and others do not. In some areas, caregivers are asked to attend PD-Hearth sessions for 12 consecutive days and in other communities, only once a month is dedicated to this. There is no uniformity in implementation. Disparities also suggest that messages disseminated may be different from one organization to the other.

When using the PD-Hearth concept for nutrition education, it is important to establish that participating households are food secure, and positive feeding practices or behaviors that need to be promoted are identified within the community. In communities visited, PD-Hearth was applied even when these conditions were not met, an indication that the concept may have been misunderstood. Guidelines developed by the NFNC need to be disseminated and followed to improve quality of implementing PD-Hearth.

***PD-Hearth in Kazungula***

*Simango Rural Health Center is one facility where Care International introduced the PD-Hearth concept for management of acute malnutrition without complications. A workshop was organized for two weeks at the health center to train 69 volunteers for deployment in 10 zones of the Simango catchment area. Each health post selected volunteers for training. After training, a massive weighing exercise was conducted to identify undernourished children that required nutritional management. Malnourished children were classified into three groups: (1) severe, (2) moderate, and (3) mild. The severely malnourished children who could not be rehabilitated with food products within their community were referred to the health facility for nutrition management, de-worming and vitamin A supplementation. Children who did not improve within a specific period of intense nutrition support at the health center were referred to the hospital for further investigations.*

*Within the communities, trained CHWs requested mothers to bring food products from home for demonstrations on how to prepare nutritious meals for undernourished children. For children admitted into a health facility and then discharged, CHWs followed-up them up and assisted caregivers to rehabilitate the children at home through nutrition therapy.*

*The sister in-charge at Simango Rural Health Center explained how PD-Hearth was used to reduce malnutrition in the surrounding communities. After training the CHWs, a weighing exercise of children under five years of age was conducted in the communities. Many children were found to be undernourished. The trained CHWs took up the challenge of supporting caregivers in preparing appropriate foods for their children. At the time of the field visit, the nurse mentioned having reduced under-nutrition to almost zero within the catchment area.*

*The sister-in-charge further explained the linkage to other programs. After realizing there was limited access to other foods to diversify the diet, it became necessary to teach community members to cultivate other crops not common in the area in order to enrich their diets. Communities in the catchment area are now growing groundnuts and cowpeas. These agricultural practices were not generally associated with farming in the Simango area. Care International introduced the concept which has been sustained within communities even though the project has ended.*

The PD-Hearth concept supported the communities to improve their food security, which is necessary for successful application of the model. Challenges in Simango, Southern Province include:

a. **Length of time for training**: The 12 day continuous training made it difficult to attract CHWs willing or able to spend a long period away from home. MOH and partners need to rethink of a more appropriate way of delivering the same training to allow for CHWs not to have to leave their families for such a long time, especially since they are not compensated for the time away from their normal activities.
b. **Grouping mothers**: It was difficult to organize mothers for demonstrations. Many of them did not feel they had food to bring for demonstrations. When the concept was first introduced, food was provided by Care International. With the history of *"Chiholehole" (*free food for all) in the Southern Province, the message of using available food from home was not re-enforced.
c. **Distances:** Due to long distances that volunteers had to cover to reach community members in need, more volunteers from different locations were required for training in order to support all the communities in Simango catchment area. This is because some volunteers had to travel over 15 kilometers to reach households in other communities that were not involved in the training.

### 4.7.3 Nutrition and HIV

Nutrition and HIV are areas in which the MOH has received support from the Food and Nutrition Technical Assistance (FANTA) project for developing guidelines on nutrition in the context of HIV. Guidelines are available for printing and distribution. However, it appears that CHWs have to be trained on how to use the guidelines. For wider audience use, these guidelines should be translated into the local languages. In the communities, the problem of mixed messages also remains a challenge yet to be addressed.

### 4.7.4 Integrated management of childhood illness

Health workers play a key role at facility and community levels in assessing sick children for presence of malnutrition, feeding problems and then rendering support to facility and community interventions implemented. Some of their responsibilities include IYCF, GMP, providing immunizations, and counseling. However, at the time of the review, improving the quality of nutrition services as part of IMCI was constrained by staff work overload.

## 4.8 Coordination and linkages for community nutrition interventions

Coordination and institutional linkages at the central level are well developed for implementing community nutrition interventions. This is evidenced through joint discussions and training organized by the MOH and partners (e.g., ZISSP and Care International) for health staff and communities. For example, Care International (MoyoWaBwino Program) and ZISSP collaborated in training health care workers in IMCI under the guidance of the MOH. This effort resulted in sharing expenses and training a large number of health care workers, maximizing the use of limited resources and avoiding duplicating activities. Where and when community programs focus on the same target population, the same CHWs are used making it possible to build on the training that they might have received from other programs.

Different organizations promote numerous interventions at the community level. Without a government district focal point for harmonizing activities, it has become extremely difficult to bring together different organizations, each with its own mandate and focus. Due to competing interests of organizations,

interventions are sometimes ad hoc and not implemented according to MOH standards. There is limited accountability and transparency among local and international organizations implementing activities at the community level. This situation may be attributed to the fact that there are no government guidelines on implementation of community interventions for organizations to be obliged to report to or discuss their activities with communities where they work. Respondents indicated that it was common for organizations not to discuss progress of activities with the community or to provide feedback to the communities on research being conducted in the communities. This situation has contributed to local people viewing community interventions as an exercise for outsiders and not necessarily supporting community development.

## 4.9 Tracking of community-based interventions

Most of the organizations identified were supporting the MOH in fulfilling its primary health care role in providing health services as close to the people as possible. The majority of organizations supporting the MOH were involved in capacity building. While acquiring knowledge was important for community members, it seemed there were difficulties in measuring the effect of the training. Although numbers of those trained were documented, indicators to show the effect at the community level were not identified or defined. Apart from isolated cases of recordkeeping on children referred to health facilities for treatment, there was no systematic data tracking system and no documentation of cases to show any effect at the community level.

Data captured at community level by CHWs were not linked to national statistics. Projects operating at the community level did not have mechanisms for sharing data with communities where they were implementing interventions or with other organizations operational within the same geographical area. Lessons learned were often not shared to allow for improving services being delivered or to take stock of what worked or did not work when attempting to scale up interventions to other locations.

The government needs to take an increased leadership role in guiding communities to develop a data tracking system and as much as possible, the system should be standardized across all communities. Communities also need to be more proactive and choose which factors to monitor, i.e., ones that have value for them and that they can understand will bring about improvements in their lives. In creating a sustainable data tracking system at the community level, the literature recommends community mobilization to identify leaders for training and managing a community-based system that reflects the aspiration of the people (JICA, 2012). Indicators, for example on exclusive breast feeding coverage, etc., can be monitored and reported at community level, leading to further action to be taken by the community itself.

# 5 IMPLICATION OF FINDINGS

At the community level in Zambia, the most frequent engagement with high impact community nutrition interventions is associated with five interventions (1) exclusive breastfeeding, (2) complementary feeding, (3) vitamin A supplementation, (4) de-worming, and (5) salt iodination. The majority of organizations assessed are involved in IYCF capacity building through training of health staff and CHWs in selected locations. The high number of organizations involved in the IYCF intervention shows the value attached to promoting improved nutrition in early childhood. Frequent engagement in selected community nutrition interventions may also be due to the following.

(1) Staff member's skills and experience in implementing nutrition programs may be limited to a specific nutrition intervention.
(2) The MOH framework spells out areas of need for nutrition interventions but does not provide sufficient guidelines to oblige an organization to engage in geographical areas that are marginalized.
(3) Funds by the different donors are attached to specific functions, such that even where excess funds may be available, it is difficult to access them for nutrition programs.
(4) Many organizations supporting MOH do have expertise in specific areas but not in implementing a combination of all the high impact community nutrition interventions that MOH is promoting.
(5) There is a lack of information on what is implemented by whom and location to guide different organizations in the selection of nutrition interventions to support.

Coordination of community programs is constrained by too many players pursuing different nutrition mandates but focusing on the same target population. This is compounded by lack of a government or MOH focal point to coordinate and harmonize community nutrition interventions. It is worth exploring the possibility of building capacity of staff trained by government departments responsible for community development and social services. Officers from these departments could provide leadership on community nutrition activities.

In responding to the SUN campaign by focusing on optimal nutrition during the first1000 days, many organizations are supporting MOH in a number of activities. However, it is important to take stock of limitations of current programming. Many organizations are implementing nutrition interventions not anchored within program objectives and do not have a monitoring framework for tracking what is being achieved or not.

The limited reference to measurable indicators at the implementation level makes it difficult to track progress being made. While case studies can be documented from time to time to demonstrate effects at the community level, it is important to have a monitoring framework for ongoing community level interventions. For example, depending on the objectives of the intervention, one or two indicators reported on at national level (Table 3) may be selected for local level tracking to measure progress, achievements or effect(s) at the community level. Tracking achievements enables implementers to address problems as they arise, share experiences, successes, lessons learned and promote accountability in the overall implementation of the intervention, not to mention the critical importance of engaging the community in local ownership.

**Table 3: Selected health and nutrition indicators at national level**

| Indicators | Achievement | Source and year |
|---|---|---|
| Exclusive breastfeeding for the first six months | 61.0 % | CSO, 2009 |
| Complementary feeding starting at six months | 92.0 % | CSO, 2009 |
| Low birth weight | 4.6 % | CSO, 2009 |
| Underweight -2ZSC | 14.6 % | CSO, 2009 |
| Stunting -2ZC | 45.4% | CSO, 2009 |
| Wasting -3ZSC | 5.2% | CSO, 2009 |
| Prevalence –use of iodated salt | 77.0% | NFNC, 2003 |
| Vitamin A deficiency (low serum retinol) | 54.7% | NFNC, 2003 |
| Household with clean water supply | 52.0% | MOH, 2006 |
| Body Mass Index | 15.0% | CSO, 2009 |
| Contraceptive prevalence rate | 41.0 | CS0, 2009 |

The use of the PD-Hearth model as a tool for nutrition education demonstrates the desire to rely on local solutions for addressing nutrition problems within the local context. However, nutrition education using this model was implemented differently from one place to the other. It seems that little consideration has been given to applying the approach where there is food security. This contributes to lack of uniform messages being disseminated. The NFNC has developed guidelines on the use of PD-Hearth. Organizations promoting this model should be encouraged to seek guidance from NFNC.

The engagement of CHWs has had some positive effects in some communities. Respondents generally believed that volunteer work helped to promote harmony, security and peace within communities. Respondents from Matero Reference Clinic indicated that local authorities did report on local disease epidemics and sanitation issues such as blocked or burst pipes that needed urgent attention. Health staff confirmed that even though CHWs were sometimes unwilling to go on home visits, they usually came to the health facility to report problems that needed immediate attention by the health authorities. Health staff felt that CHWs will continue to be proactive about public health concerns that affect their communities, and it is important that this is sustained. Nonetheless, the general feeling from the interviews in Lusaka point to the need for the government to have greater control over community activities to avoid creating vacuums when externally driven projects come to an end.

## Limitations of the review

The time period for field data collection was limited. Only four districts (Lusaka, Livingstone, Ndola and Masaiti) and three health facilities (Fiwale, Kafulafuta, and Matero Reference Clinic) were visited, and two community visits (Simango in Southern Province and Chinkuyu in Copperbelt Province) were made. Comprehensive community level activities might not have been captured. For example, it was not possible to visit rural communities of Kaputa and Kasempa districts where local people are involved in salt mining and processing.

# 6 CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Strengthen monitoring of community nutrition interventions

Currently, there is no baseline for the IYCF indicators (such as exclusive breasting for the first six months or introduction of complementary feeding at six months) in areas where training and mentorship are being supported for these particular interventions. Nutrition indicators are not defined for tracking progress at the implementation level. At least one indicator for IYCF should be identified to measure the effect of increased training and mentorship at the community level.

## 6.2 Provide equipment/supplies and job aides

Job aides such as counseling cards were often unavailable at the community level. In addition, lack of equipment (Salter scales and weighing bags) would most likely impede application of knowledge and skills acquired from the training. These aides and equipment need to be provided as part of the training or communities should be encouraged to use equipment from other similar programs implemented (where the supplies are available as part of integrated health services).

## 6.3 Develop guidelines on using Community Health Workers

CHWs were often demoralized and de-motivated. In order to promote enthusiasm among CHWs, it is important to consider their situation with regard to time spent in the various health related activities they support, for example, ensuring that they are provided with protective wear and transport. There is an absence of national guidelines on the role of, functions of, and remuneration or incentives for CHWs. With regard to remuneration and/or incentives, this may lead to different implementing partner organizations addressing this issue differently, some providing one type of incentive or remuneration and some not providing anything. Where remuneration has been provided, usually such an incentive is limited to a specific period of time and activity and ultimately not sustainable. The government needs to formalize guidelines on remuneration or incentives that can be applied uniformly for CHWs.

## 6.4 Work towards sustainability

Sustaining an intervention is influenced by a number of factors including a sufficient number of qualified health staff and CHWs as well as harmonization of activities implemented at the community level. In order to effectively sustain activities, a critical mass of skilled persons who can transfer knowledge and skills to others is required. In addition, there should be a government focal person identified from the MOH or a government department with a community development portfolio to coordinate nutrition activities at the community level and provide strategic direction to organizations that may engage in different community nutrition interventions wherever these may take place. It is also important to encourage communities to use local foods for nutrition demonstrations in order to re-enforce improved feeding practices within their socio-economic context. This will also contribute to sustaining appropriate interventions.

## 6.5 Strengthen the National Nutrition Technical Working Group

To broaden opportunities for sharing lessons learned on implementing high impact nutrition interventions, the national Nutrition Technical Working Group (NTWG) involving technical staff from key government departments (e.g., MOH, NFNC, and Community Development), non-governmental NGOs (Care International and World Vision), projects (ZISSP), and UN organizations (World Food Program and UNICEF) involved in nutrition interventions should be strengthened by scheduling regular quarterly meetings to share important information on nutrition interventions and how best such

interventions can be implemented and scaled up. Decision makers, particularly those responsible for approving budgets and policies within such institutions should also be encouraged to attend NTWG meetings to provide oversight on issues related to implementation of community nutrition interventions. The TWG sub-committees are established so that actions taken by the NTWG are widely adopted and contribute to improving the implementation of high impact community nutrition interventions. Sub-committees would also help to ensure that the same messages are disseminated and that common standards are adopted for services being delivered in all communities.

## 6.6 Finalize nutrition orientation guidelines for nutritionists

To reduce inappropriate assignments and postings of nutrition staff and improve their performance, nutrition guidelines for newly appointed nutrition officers at various levels, which have already been drafted by the MOH, need to be finalized and disseminated.

## 6.7 Share experiences

To improve the sharing of experiences and lessons learned, seminars on nutrition interventions being implemented at community level should be organized regularly by forums such as the NTWG and organizations involved in nutrition interventions. These forums may involve staff from government departments, NGOs and UN organizations. This will facilitate more opportunities for information sharing and networking and contribute to improving implementation of community nutrition interventions and reduced malnutrition rates.

## 6.8 Apply a more uniform PD-Hearth concept at community level

The PD-Hearth concept demonstrates an opportunity and means to rely on local solutions for addressing nutrition problems within the local context. Nonetheless, differences in the approach are a sign that messages being disseminated in communities are not uniform. PD-Hearth depends on community assessments to determine if the PD-Hearth model is a good fit for nutrition demonstrations. Organizations seeking to support communities using this model should abide by the guidelines that have been developed by the NFNC.

One criterion for PD-Hearth demonstrations in the community is food security at the household level. Empowering households to become food secure may include local income generating activities with inter-sectoral support for local food processing and preservation. This would involve local participation in nutrition demonstrations and contribute to sustaining appropriate feeding practices.

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# 8 ANNEXES

## 8.1 Terms of reference

**Scope of work:**

- Identify key background documents for desk review;
- Conduct literature review to identify gaps to guide field data collection;
- Develop data collection tools in liaison with other stake holders;
- Oversee and conduct field data collection exercise in selected districts;
- In consultation with supervisors, identify key informants for interviews;
- Conduct key informant interviews on nutrition programs being implemented and map their geographical locations;
- Consolidate a comprehensive report of findings and draw up recommendations;
- Disseminate results to policy makers and the Nutrition Technical Working Group.

**Deliverables:**

A consolidated report on the implementation of programs and their status, impact of the key nutrition programs including details:

- Type of programs (interventions) and their geographical coverage;
- Type of policies that support community nutrition interventions.
- Current support, availability of supplies and equipment;
- training of volunteers and sustainability issues,
- Linkages between various nutrition programs on one hand; and between nutrition and other relevant health programs, on the other.
- Recommendations on improved tracking of community-based nutrition indicators
- Stakeholder mapping

## 8.2 Key informant interview checklist

**Objective of consultancy:**
To review and document experience and lessons learned in implementing community-based high impact nutrition programs in selected districts.

**(A) National/provincial level discussions**
1. Please identify high impact nutrition interventions being implemented at the community Level.
2. Discuss the following interventions in relation to community level implementation:

| Intervention | Objective | Coverage | Management (personnel, capacity, training, mentorship, equipment, supplies, etc.) | Community Involvement | Linkages with whom and for what | Indicators for monitoring |
|---|---|---|---|---|---|---|
| **High Impact Interventions** | | | | | | |
| 1. IYCF (breastfeeding) | | | | | | |
| 2. IYCF (complementary) | | | | | | |
| 2. IYCF/CBGMP Integration | | | | | | |
| 3. Vitamin A | | | | | | |
| 4. Hygiene | | | | | | |
| 5. Zinc supplementation | | | | | | |
| 6. Multi-micronutrient | | | | | | |
| 7. De-worming | | | | | | |
| 8. Iron supplementation | | | | | | |
| 9. Iodized oil | | | | | | |
| 10. Salt iodization | | | | | | |
| 11. Staple fortification | | | | | | |
| 12. Prevention & treatment of moderate under-nutrition | | | | | | |
| 13. Treatment of severe under-nutrition without complications with RUTFC-MAM | | | | | | |
| **Other Interventions** | | | | | | |
| C-IMCI | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| RED (Immunization) | | | | | | |
| Nutrition and HIV | | | | | | |
| Nutrition Education/demonstrations | | | | | | |
| Reproductive health | | | | | | |
| Maternal and Adolescent Nutrition | | | | | | |

**(A) For each of the interventions discussed above, elaborate on the following:**

i. Who is implementing the intervention?
ii. Who are the sponsors/partners
iii. Strengths of the intervention
iv. Achievements of the intervention
v. Supervision and monitoring
vi. Availability of guidelines/standards for delivery and adherence
vii. Gaps and challenges
viii. Weakness and how these can be addressed
ix. Possible indicators for monitoring
x. Recommendations

**(B) Interactive Community level (key informant or group discussions)**

i. Identify high impact nutrition interventions being implemented in the community.

ii. What role are you playing in the intervention (area of involvement)?

iii. Who is implementing and sponsoring the program?

iv. What activities are being implemented under the intervention?

v. What support is available for implementing the intervention (e.g., guidelines, supervision, mentorship)?

vi. What aspects of the intervention are reported on and how often?

vii. What linkages exist with other programs and areas of the linkages?

viii. In what way has the intervention made a difference in the community (strengths, examples, cases, etc.)?

ix. What is the weakness of the interventions (problems, challenges, etc.)?

x. In what way would you improve the implementation of this intervention?

xi. Would you recommend that this intervention be extended to another community?

xii. Please explain why you think so.

xiii. What aspects of the intervention do you think will be sustained after funding stops?

xiv. Why do you think those areas will be continued?

xv. What recommendations do you have on how the program can be better implemented?

xvi. Please explain other issues that you think have had an influence on implementation of this intervention.

## 8.3 Annex of people met/interviewed

| Name | Organization |
|---|---|
| Ms Mary Kaoma | ZISSP |
| Ms Tina Nyirenda | ZISSP |
| Ms Ruth Siyandi | UNICEF |
| MS Agnes Aongola | MOH |
| Mr. Mike Mwanza | NFNC |
| Margret Mwila | Luangwa DHMT |
| Janet Mabwe | Kafue DHMT |
| Rabecca Mwewa | Chongwe DHMT |
| Francis D. Managni | Care international |
| Chibelo Kambikambi | Save the Children |
| Dr. Chandwa Ngambi | Provincial Medial Officer – Ndola |
| Ms Grace Hazemba | Provincial Nutritionist – Ndola |
| Ms Wendy Munyekele | ZISSP Community Coordinator, Copperbelt |
| Mr. Chileshe Mutale | Acting Medical officer – Masaiti |
| Mr. Jasper Musonda | MPD – Masaiti |
| Mrs. H Mpengula | Masaiti Midwife nurse |
| Ms Kabala | Sister in charge – Fiwale Hill Rural health Center |
| Mr. Morgan Tongo | Admin Manager – Fiwale Hill Rural health Center |
| Mr. C. Kasabila | CHW – Fiwale Hill Rural Health Center |
| Ms Silvia Mwendele | CHW – Fiwale Hill Rural Health Center |
| Mr. Malokota Lebson | CHW – Fiwale Hill Rural Health Center |
| Ms Mary Neli | CHW – Kafulafuta Mission Rural Health Center |
| Mr. Mpasi Ngoma | Environmental health technician |
| Ms Mary Mulenga | Nurse & Coordinator for CHW |
| Ms Mavis Mabeti | Community Health worker |
| Mr. Eridge Simukanzye | ZISSP Community Coordinator, Southern Province |
| Ms Martha Chokoni | Acting provincial nutritionist, Livingstone |
| Dr. Kebby Musokwatwane Jr. | Provincial Clinical Medical officer – Non-communicable diseases |
| Mr. Francis Chibanga | Clinical Car expert – Kazungura |
| Ms Lapial Chirwa | Surveillance Officer – Kazungura |
| Ms Jane Chipandwe | Sister-in charge – Simango Rural health center–Kazungura |
| MsAlanda Chirwa | Assistant – Simango Rural health center – Kazungura |
| Ms Mercy Kaoma | Sister in charge, Matero Reference Clinic |
| Ms Judith Musonda | CHW, Matero Reference Clinic |
| Mr. Pierre Chindongo | CHW, Matero Reference Clinic |
| Ms Janet Kawana | CHW, Matero Reference Clinic |
| Ms Agnes Zimba | CHW, Matero Reference Clinic |
| Ms Regina Bwalya | CHW, Matero Reference Clinic |
| Ms Regina Bwalya | CHW, Matero Reference Clinic |
| Ms Queen Mwape | CHW, Matero Reference Clinic |
| Ms Margret Daka | CHW, Matero Reference Clinic |
| Ms Jenifer Nyambe | CHW, Matero Reference Clinic |
| Ms Mavis Kambita | CHW, Matero Reference Clinic |
| Ms Joyce Wamaposo | CHW, Matero Reference Clinic |
| Ms Catherine Mwale | CHW, Matero Reference Clinic |
| Ms Janet Banda | CHW, Matero Reference Clinic |

| | |
|---|---|
| Ms Josephine Chitalu | CHW, Matero Reference Clinic |
| Mr. Davison Chilika | CHW, Matero Reference Clinic |
| Mr. Robert Banda | CHW, Matero Reference Clinic |
| Ms Beatrice Bwembya | CHW, Matero Reference Clinic |
| Ms Agnes Zulu | CHW, Matero Reference Clinic |
| Mr. Agnes Zule | CHW, Matero Reference Clinic |
| Ms Gladys Kabaghe | National Food and Nutrition Commission |
| Mr. Fredie Mubanga | National Food and Nutrition Commission |
| MsChisela Kaliwile | National Food and Nutrition Commission |
| Mr. Musonda Mofu | National Food and Nutrition Commission |
| Mr. Mike Mwanza | National Food and Nutrition Commission |
| Kafulafuta | 100 caregivers at under five clinic (observations and discussions) |